



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:

SHAO, XIE, et al.

Serial No.: 09/836,832

Filed: April 17, 2001

ANTI-REFLECTIVE COATING
COMPOSITION WITH IMPROVED SPIN
BOWL COMPATIBILITY

Docket No.: 30430

Group Art Unit No.: 1773

Examiner: Keehan, Christopher M.

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

DECLARATION

I, Xie Shao, declare and state as follows:

1. I am one of the inventors named on the above-referenced patent application. I am currently a Product Manager in the Chemical Division with Brewer Science, Inc., and have been employed by Brewer Science, Inc. for 9 years. I previously served as the Group Manager for the Anti-Reflective Coating Section of the Research and Development Group at Brewer Science, Inc.

2. Under my direction and control, tests were carried out to show that the compositions disclosed in U.S. Patent No. 5,919,599 to Meador et al. does not yield a spin bowl compatibility test result of greater than about 90% as recited in claims 11, 22, 25, 36, 44, 47, 65, and 67. In these tests, Example 1 of the Meador et al. patent was duplicated to yield a composition which was then subjected to the spin bowl compatibility test described in the above-referenced patent application.

Example 1 was selected due to the fact that it was cited at least seven times by the Examiner in the first office action of the present patent application. Example 1 was also the only example cited

by the Examiner in raising inherency rejections to the spin bowl compatibility claims (i.e., claims 11, 22, 25, 36, 44, and 47). As a result of the foregoing, it is believed that Example 1 is the most suitable for testing and is the example in the Meador et al. patent which is most likely to give the recited spin bowl compatibility test results.

3. An anti-reflective coating was prepared exactly as described in Example 1 of the Meador et al. patent (column 8, lines 28-67, but excluding the optical density determination described in lines 54-60) except that the quantities of ingredients used were scaled up in order to yield a larger quantity of the composition for subsequent spin bowl compatibility testing. However, the same relative weight percentages were utilized, so the properties of the test composition would be exactly the same as those of the Example 1 Meador et al. composition.

4. The resulting anti-reflective coating was then subjected to the spin bowl compatibility test described in Example 5 (page 9) of the present application. The test was carried out with several different solvents, and the percent solubility was determined as shown in the equation on page 9, lines 19-24 of the present application. The results obtained in these tests are set forth in Table 1.

Table 1 - Spin Bowl Compatibility Test Results for Example 1 of U.S. Patent No. 5,919,599 to Meador et al.

Solvent	Thickness before strip, Å	Thickness after strip, Å	% loss	Spin Bowl Compatible
Acetone	1719	707	58.9	No
Cyclohexanone	1721	626	63.6	No
Ethyl-3- ethoxypropionate	1724	593	65.6	No
Ethyl lactate	1712	281	83.6	No
2-heptanone	1715	359	79.1	No
PGME	1716	485	71.7	No
PGMEA	1708	404	76.3	No
PnP	1712	877	48.8	No

The average of the above results is 68.5%. As shown by these results, the composition of Example 1 of the Meador et al. patent was unable to achieve a spin bowl compatibility test of at least about 90%, regardless of the solvent utilized.

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I further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that wilful, false statements and the like are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and such wilful false statements may jeopardize the validity of any patents issued from the patent application.


Xie Shao

Date: 12/30/2002